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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,790	06/27/2003	Alan Michael Jaffee	7302	6842

7590

05/31/2005

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10100 West Ute Avenue
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EXAMINER

BOYD, JENNIFER A

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/608,790

Applicant(s)

JAFFEE, ALAN MICHAEL

Examiner

Jennifer A. Boyd

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1- 7, 9, 11- 29 and 31 - 33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1- 7, 9, 11- 29 and 31 - 33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The Applicant's Amendments and Accompanying Remarks, filed March 8, 2005, have been entered and have been carefully considered. Claims 1 – 7, 9, 24, 29 and 31 – 33 are amended, claims 8 and 10 are cancelled and claims 1- 7, 9, 11- 29 and 31 – 33 are pending. In view of Applicant's amendments regarding the limitation "chopped continuous glass fibers", the Examiner withdraws the previously set forth 35 USC 112, 2nd paragraph rejection. In view of Applicant's amendment requiring the use of glass or mineral fibers for the fine staple fibers and excluding the use of polymeric fine fibers, the Examiner withdraws the previously set forth rejection as detailed in paragraph 10 of the Office Action dated February 3, 2005. After another search, additional prior art has been found which renders in the invention as currently claimed unpatentable for reasons herein below.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 24 remains rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim Rejections - 35 USC § 102

5. Claims 1 – 7, 12 – 15, 18, 24, 29 and 33 remain rejected under 35 U.S.C. 102(b) as being anticipated by Graves (US 5,389,716). The details of the rejection can be found in the Office Action dated March 8, 2005. Claim 9 is now also rejected under 35 U.S.C. 102(b) as being anticipated by Graves (US 5,389,716).

Claim 9 requires that the fine staple fibers are composed of various fibers including mineral wool. Graves teaches that the fibrous mat comprises mineral wool fibers having a diameter between 2 and 6 microns (column 9, lines 50 – 60), which may be in part substituted with glass fibers (column 11, lines 33 – 37) having a diameter between 3 and 30 microns (column 10, lines 15 – 25).

Claim Rejections - 35 USC § 103

6. Claims 1 – 2, 5, 7, 9, 15, 11, 17 - 19, 22 – 23, 28 - 29, 31 – 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kajander et al. (US 6,723,670) in view of Gill et al. (US 4,637,951).

Kajander is directed to a coated nonwoven fiber mat suited as a facer on a gypsum wallboard (Abstract).

As to claims 1, 17, 29 and 32 - 33, Kajander teaches a mat for use as a facer on a gypsum wall board comprising 40 – 80 % by weight of fibers, 5 – 35 % by weight of foam and 10 – 30 % by weight of binder (column 6, lines 55 – 65). The majority of the fibers are glass fibers and preferably all of the fibers are glass fibers (column 6, lines 65 – 68). The fibers should be at least

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0.25 inch (6.35 mm) or longer. Kajander notes that mixtures of fibers of different lengths and/or fiber diameters can be used as is known (column 7, lines 10 – 20). The Examiner equates the mixture of glass fibers to Applicant's "chopped glass fibers" and "fine staple fibers". Kajander teaches that fibers of any diameter can be used (column 7, lines 29 – 33). Kajander notes that larger fiber diameters have caused irritation problems in past facer products causing the industry to shift to more costly smaller diameter fibers like H or G fibers (column 7, lines 25 – 33).

Kajander notes that the foam coated mats of the invention can be bonded to a gypsum wall board (column 12, lines 20 – 40).

As to claims 2 and 3, Kajander teaches that the glass fibers can be type E, type C, type T or any known type of glass fiber (column 7, lines 17 – 20).

As to claims 5 and 7, Kajander teaches that the fibers should be at least 0.25 inch (6.35 mm) or longer (column 7, lines 10 – 15).

As to claim 9, Kajander teaches that the majority of the fibers are glass fibers and preferably all of the fibers are glass fibers (column 6, lines 65 – 68). Kajander notes that mixtures of fibers of different lengths and/or fiber diameters can be used as is known (column 7, lines 10 – 20).

As to claim 11, Kajander teaches that the glass fibers can be type E, type C, type T or any known type of glass fiber (column 7, lines 17 – 20).

As to claims 18 – 19 and 22 - 23, Kajander teaches that the binder can comprise melamine formaldehyde binders modified with polyvinyl acetate and/or acrylic or cross linked vinyl chloride acrylate copolymer having a glass transition temperature as high as about 113

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degrees F (column 3, lines 5 – 15 and column 7, lines 34 – 40). It should be noted that melamine formaldehyde would function as Applicant's "cross-linker".

As to claim 31, Kajander teaches a mat for use as a facer on a gypsum wall board comprising 40 – 80 % by weight of fibers, 5 – 35 % by weight of foam and 10 – 30 % by weight of binder (column 6, lines 55 – 65). The majority of the fibers are glass fibers and preferably all of the fibers are glass fibers (column 6, lines 65 – 68). The fibers should be at least 0.25 inch (6.35 mm) or longer. Kajander notes that mixtures of fibers of different lengths and/or fiber diameters can be used as is known (column 7, lines 10 – 20). The Examiner equates the mixture of glass fibers to Applicant's "chopped glass fibers" and "fine staple fibers". Kajander teaches that fibers of any diameter can be used (column 7, lines 29 – 33). Kajander notes that larger fiber diameters have caused irritation problems in past facer products causing the industry to shift to more costly smaller diameter fibers like H or G fibers (column 7, lines 25 – 33). Kajander teaches that the binder can comprise melamine formaldehyde binders modified with polyvinyl acetate and/or acrylic or cross linked vinyl chloride acrylate copolymer having a glass transition temperature as high as about 113 degrees F (column 3, lines 5 – 15 and column 7, lines 34 – 40).

Kajander fails to disclose that the mixture of glass fibers comprises a major portion of chopped glass fibers having an average diameter from about 8 – 17 microns and a minor portion of fine glass staple fibers having an average fiber diameter of less than about 5.5 microns.

Gill is directed to fibrous mat facers with improved strike-through resistance (Title). Gill teaches glass mats comprising a mixture of two types of glass fibers, both being glass

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monofilament fibers (column 3, lines 5 – 10). The first type, or base fibers, comprise glass monofilament fibers of conventional form and composition. Generally, these fibers are made by a continuous filament process and chopped to discrete and predetermined lengths such as between $\frac{1}{4}$ - 1 inch (6.35 mm – 25.4 mm) and range from 8 – 25 microns in diameter (column 3, lines 15 – 25). The other basic fibers in the mat are microfibers having a mean diameter range from 0.05 to 3.5 microns and length between $\frac{1}{8}$ – $\frac{1}{4}$ inch (3.175 mm – 6.35 mm) (column 3, lines 40 – 58).

It would have been obvious to one of ordinary skill in the art to use the suggested mixture of glass fibers as discussed by Gill in the mat of Kajander motivated by the desire to create a facer with improved strike-through resistance and skin-irritation problems.

As to claims 1, 15, 29 and 31 – 33, Kajander in view of Gill discloses the claimed invention except for that the minor portion of fine fibers comprises about 1 – 30 percent of the dry web as required by claims 1, 29 and 31 - 33 or 20 – 30 percent of the dry web as required by claim 15. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create a facer material comprising a minor portion of fine fibers about 1 – 30 percent of the dry web as required by claims 1, 29 and 31 - 33 or 20 – 30 percent of the dry web as required by claim 15 since it has been held that where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454 USPQ 233 (CCPA 1955). In the present invention, one would have been motivated to optimize the amount of fine fibers in order to create a facing material with easy handling while minimizing cost.

As to claims 28 and 32, although Kajander in view of Gill does not explicitly teach the claimed flame resistance to pass the test of ASTM Method E84, Class 1 as required by claim 28 and a permeability of at least 250 cfm/ft² at a differential pressure of 0.5 inches of water as required by claim 32, it is reasonable to presume that said properties are inherent. Support for said presumption is found in the use of like materials (i.e. a gypsum board having a facing layer comprising a mixture of varying diameter glass fibers and a binder) which would result in the claimed properties. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed property would obviously have been present once the Kajander in view of Gill product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

7. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graves (US 5,389,716) in view of Horner, Jr. et al. (US 6,365,533).

Graves teaches the claimed invention above but fails to disclose that the second facer can comprise kraft paper.

Horner, Jr. et al. is directed to a foamed facer suitable for use in the construction industry comprising a dry preformed glass fiber mat containing a binder (Abstract). Horner teaches that the first and second facers can be of the same or of a different composition than that of this invention. More specifically, one of the facer sheets maybe be selected from those conventionally employed such as kraft paper and the other facer sheet is one of the current invention which enhances the composite (column 6, lines 1 – 15).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a kraft paper as one of the facer materials as suggested by Horner, Jr. et al. in the gypsum board composite of Jaffee motivated by the desire to save manufacturing costs by employing a conventional facer on one side and the improved and enhanced facer on the other side.

8. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graves (US 5,389,716) in view of Carbo et al. (US 2004/0209071).

Jaffee teaches the claimed invention above but fails to teach that the core further comprises a biocide.

Carbo is directed to a mold resistant acoustical panel (Title). Carbo notes that attempts have been made to reduce microbe growth by introducing biocides, such as fungicides and bactericides, into coatings for acoustical panels. Although some protection against microbe growth is obtained, it is short-lived under severe conditions. When the entire panel contains nutrients for microbes, the relatively small amount of biocide in the coating may not be sufficient to protect the larger amount of food available in the core of the panel (page 1, [0006]). Carbo teaches that the composition of the present invention protects the core of the panel, a function which is not guaranteed by antimicrobial coatings. The biocide in the core affords protection to the entire panel, even if no coating is used (page 2, [0013]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a biocide into the core as suggested by Carbo in the composite of

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Graves motivated by the desire to afford microbe growth protection to the entire panel (Carbo, pages 1 – 2).

9. Claims 25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graves (US 5,389,716) in view of Lehnert et al. (US 4,647,496).

Graves teaches the claimed invention above but fails to teach that the gypsum core comprises at least one water repellant agent as required by claim 25 and reinforcing fiber as required by claim 27.

Lehnert is directed to a fibrous mat-faced gypsum board for exterior-finishing systems for buildings (Title). The board comprises a gypsum core and a fibrous mats as facing materials (column 9, lines 5 – 10). The gypsum core preferably contains an additive to improve the ability of the gypsum composite to resist being degraded by water, for example, to resist dissolution (column 9, lines 50 – 60). Lehnert teaches that the gypsum core can further comprise a paper fiber which acts as a viscosity-control agent (column 13, lines 15 – 20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate an water repellant agent as suggested by Lehnert in the core of Graves motivated by the desire to improve the resistance of the composite to water.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate fiber into the gypsum core as suggested by Lehnert in the core of Graves motivated by the desire to control the viscosity of the slurry during manufacturing.

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10. Claims 20 – 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kajander et al. (US 6,723,670) in view of Gill et al. (US 4,637,951) as applied above, further in view of Brown (US 5,514,744).

Kajander in view of Gill teaches the claimed invention above but fails to teach that the cross-linker is present in the amount of up to 10 percent by weight as required by claim 20 or ranging from 2 – 5 percent as required by claim 21.

Brown is directed to cement products comprising gypsum (Title and Abstract). Brown teaches the polymer binder used can comprise a plasticizer to enhance workability (column 3, lines 24 – 25). Brown teaches that the plasticizer can comprise melamine formaldehyde polymer, preferably comprising 1 to 10 parts by solid content weight. The melamine formaldehyde polymer has a tendency to migrate during cure to the center of the mixture as the product therein cures, thus serving to reinforce and strengthen the main bulk of the product (column 3, lines 24 – 33). The melamine formaldehyde polymer is fully compatible with and will cross-link to acrylic materials (column 3, lines 30 – 35).

It would have been obvious to one ordinary skill in the art at the time the invention was made to incorporate melamine formaldehyde in the proportions suggested by Brown in the composition of Kajander in view of Gill motivated by the desire to reinforce and strengthen the composite product.

Response to Arguments

11. Applicant's arguments with respect to the rejections as being unpatentable and obvious over Jaffee have been considered but are moot in view of the new ground(s) of rejection.

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12. Applicant argues that “an effective amount” is not indefinite. The Applicant refers the Examiner to specification to clarify, for instance, that “an effective amount” would require a sufficient amount of flame retardant to comply with ASTM Standard E84 and a sufficient amount of biocide or fungicide to resist fungal growth, as delineated by ASTM Standard D3274. The Examiner submits that the limitation “an effective amount” remains indefinite because the Office is not equipped to perform tests in order to determine, for instance, the amount of flame retardant suggested in an applied reference would comply with ASTM Standards, etc. The rejection stands.

13. Applicant argues that Graves does not disclose Applicant’s claimed ranges. The Examiner acknowledges that Graves discloses a broad range of proportions of mineral wool and glass fibers, however, the disclosure of Graves still overlaps the Applicant’s claimed ranges. Applicant argues that Table 1 of Graves discloses examples where the wool fiber percentage is far larger than Applicant’s claimed range of 1 – 30 percent. It should be noted that disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments. See *In re Susi*, F.2d 442, 169 USPQ 423 (CCPA 1971). Furthermore, Applicant argues that the average glass fiber diameter range, length and fine staple fiber proportion is much broader than Applicant’s claimed ranges. The Examiner submits that Graves teaches each and every limitation. If the claimed ranges have unexpected results, the burden is upon the Applicant to demonstrate that Applicant’s narrower range is not a result of optimization. The Examiner highly suggests to the Applicant to submit a 37 CFR 1.132 Declaration to establish unexpected results. In the Declaration, the Applicant should compare a sufficient number of tests both inside and outside the claimed range to show the criticality of the

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claimed range. *In re Hill*, 284 F.2d 955, 128 USPQ 197 (CCPA 1960) and must compare the claimed subject matter with the closest prior art to be effective to rebut a prima facie case of obviousness.

14. Applicant argues that Graves fails to recognize the properties of Applicant's claimed mat such as high permeability to permit extraction of water during fabrication and smooth surface of final board product. It should be noted that Applicant does not include these properties in the claim limitations. If Applicant's proportions of mineral wool, glass fibers, etc. results in high permeability and a smooth surface in the final board product, Applicant should demonstrate that in the Declaration.

15. Applicant argues that "hydraulic set" should be given patentable weight because it defines an article of manufacture. The Applicant indicates that gypsum boards are a type of hydraulic set materials so it is submitted that Graves and newly applied reference Kajander teach Applicant's limitation.

Conclusion

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period


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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Boyd whose telephone number is 571-272-1473. The examiner can normally be reached on Monday thru Friday (8:30am - 6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jennifer Boyd
May 25, 2005


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